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June 10, 11, and 12, and comparisons with neighbouring stars were made, which will be rendered available when the places of the comparison stars have been accurately determined.

VII. Observations of the Solar Eclipse of 1845, May 5, and of the Transit of *Mercury* of 1845, May 8, in a Letter from W. Lassell, Esq.

" *Starfield, Liverpool,* 10*th June,* 1845.

" I send you such observations as I have been able to make of the late solar eclipse and transit of *Mercury*, for which the weather was, in some respects, but very unfavourable.

" May 5, 1845. With a very unpromising sky I prepared to observe the first contact of the solar eclipse by placing that part of the sun's limb (then very indistinct) which the moon would first touch, between the parallel threads of the micrometer, applied to the nine-feet equatoreal, with a power of ninety-six times.

" As the time of contact approached the sky somewhat cleared, and the moon's first impression took place at $23^h\ 14^m\ 37^s{\cdot}8$ sidereal time, or $20^h\ 18^m\ 24^s{\cdot}17$ mean time at the observatory. During the greatest part of the obscuration the sky was very cloudy, but towards the end it cleared, and the last contact was well observed at $1^h\ 33^m\ 48^s{\cdot}9$ sidereal, or $22^h\ 37^m\ 12^s{\cdot}45$ mean time. No phenomena beyond what is usual occurred; nor was there, to my senses, any perceptible diminution of light on the landscape.

" May 8. For the transit of *Mercury* the appearances a short time before it began were still more unpromising. During the forenoon, we had several showers, with a most gloomy sky; and even as late as half-past three P.M. we had a smart shower of close, small rain. A little change for the better occurred shortly before four, and I had just time to set the micrometer by the sun's limb after he became visible, and get settled at the telescope, when the first notch was cut out by the planet. The sun's limb was beautifully sharp, but occasionally obscured by passing clouds. From the time, however, of the first impression until the planet had advanced about two of its diameters upon the disc of the sun, it was generally unclouded, and the atmosphere remarkably tranquil. The first contact took place at $7^h\ 13^m\ 36^s{\cdot}3$ sidereal time, or $4^h\ 8^m\ 12^s{\cdot}36$ mean time. The internal contact, or complete immersion of the planet, took place at $7^h\ 16^m\ 48^s{\cdot}7$ sidereal, or $4^h\ 11^m\ 24^s{\cdot}24$ mean time. Both times were carefully and, I believe, accurately noted. Whilst the planet was traversing the *edge* of the sun, an apparent distortion took place, the parts of the sun's edge, or limb, in contact with the planet, appearing *rounded off;* and a moment or two before the complete immersion of the planet, an appearance analogous to *Mr. Baily's beads* took place,— the planet apparently breaking contact two or three times with the sun's limb before the final separation occurred. *Mercury* had also, to my eye, somewhat of a pear-like shape previously to his

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entering quite within the sun's disc. When he had advanced two or three of his diameters, the clouds rapidly thickened, and I saw him no more.

"I take this opportunity of stating, that a late redetermination of the longitude of my Observatory depending upon the lately determined longitude of the Liverpool Observatory, inclines me to adopt finally $11^{m}\ 47^{s}\cdot 34$ as my longitude west of Greenwich, which differs scarcely a quarter of a second from that given in my paper contained in the forthcoming volume of the Society's *Memoirs*.

"The latitude I have also redetermined lately by transits of seven stars over the prime vertical, giving $53^{\circ}\ 25'\ 3''\cdot 5$ as the mean result."

VIII. Observations of the Transit of *Mercury* made at Aylesbury by Thomas Dell, Esq. Communicated by Dr. Lee.

"*Transit of Mercury.*—The first contact of the two limbs was invisible, the sun being obscured by heavy clouds; but almost immediately afterwards it broke through them, and the interior contact of the limbs was well observed at $4^{h}\ 18^{m}\ 33^{s}$ mean time. The sun was covered by light fleecy clouds, through which it was distinctly visible, and the discs of both the sun and *Mercury* were most beautifully and sharply defined until $5^{h}\ 12^{m}$, when the whole sky became densely overcast, and continued so until after sunset. The time of interior contact is, I believe, accurate to a second, as the error of the chronometer had been determined at the sun's transit at noon."

The President then announced that, in pursuance of a resolution of the Council, which had been duly intimated to the Fellows, as required by the Bye-laws, the business of the Ordinary Meeting was now concluded, and that a Special General Meeting would immediately be held to take into consideration a subject, of which due notice had been given to the Fellows by the following circular, which he requested the Secretary to read:—

"*Somerset House, June 5th*, 1845.

"SIR,—I have the honour of notifying to you that in pursuance of a Resolution of the Council, passed on Friday, the 23d of May last, a Special General Meeting of this Society will be held at the Society's apartments on Friday, the 13th day of June instant, immediately after the business of the Ordinary Meeting to be held on that day is concluded, for the purpose of taking into consideration and deciding upon a recommendation of the Council to suspend upon that occasion the Bye-laws relative to the Election of Fellows, and to elect as Fellows of this Society the remaining Members of the Mathematical Society (now reduced to nineteen in number, of whom three are already Fellows), without payment of the usual Admission Fees and Annual Contributions (or compositions in lieu thereof), the Mathematical Society having announced

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